

FIG. 1

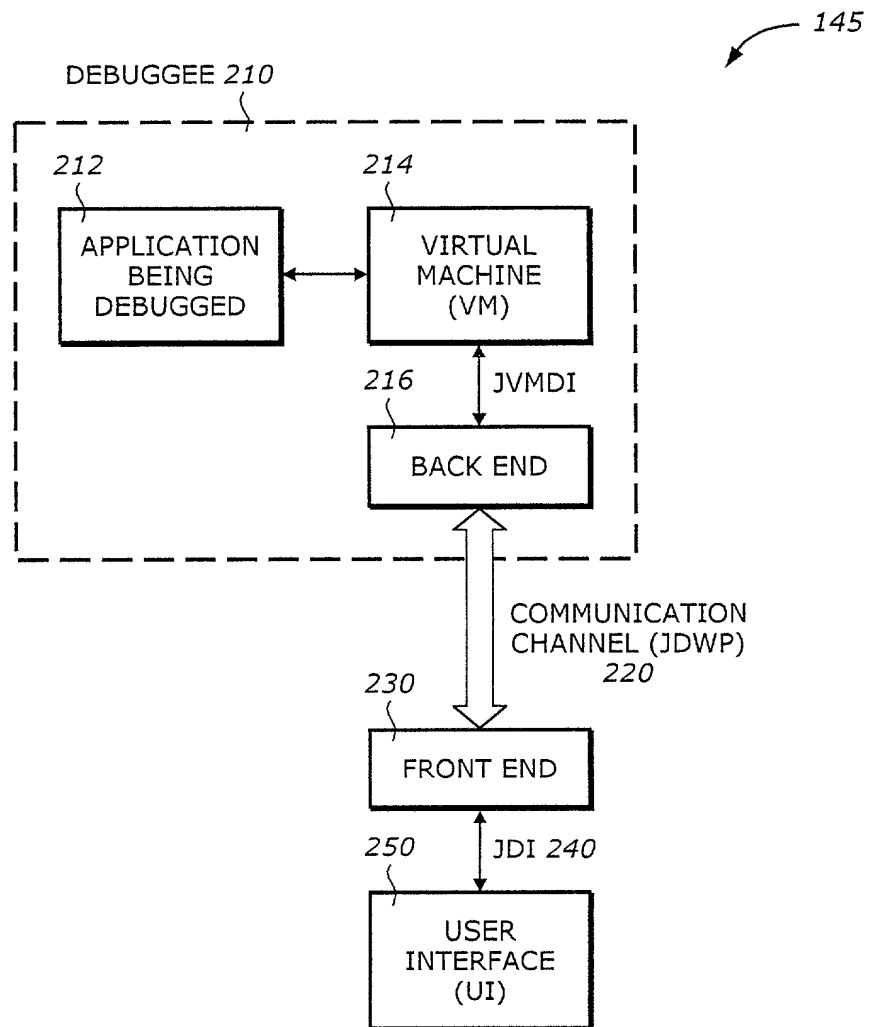


FIG. 2

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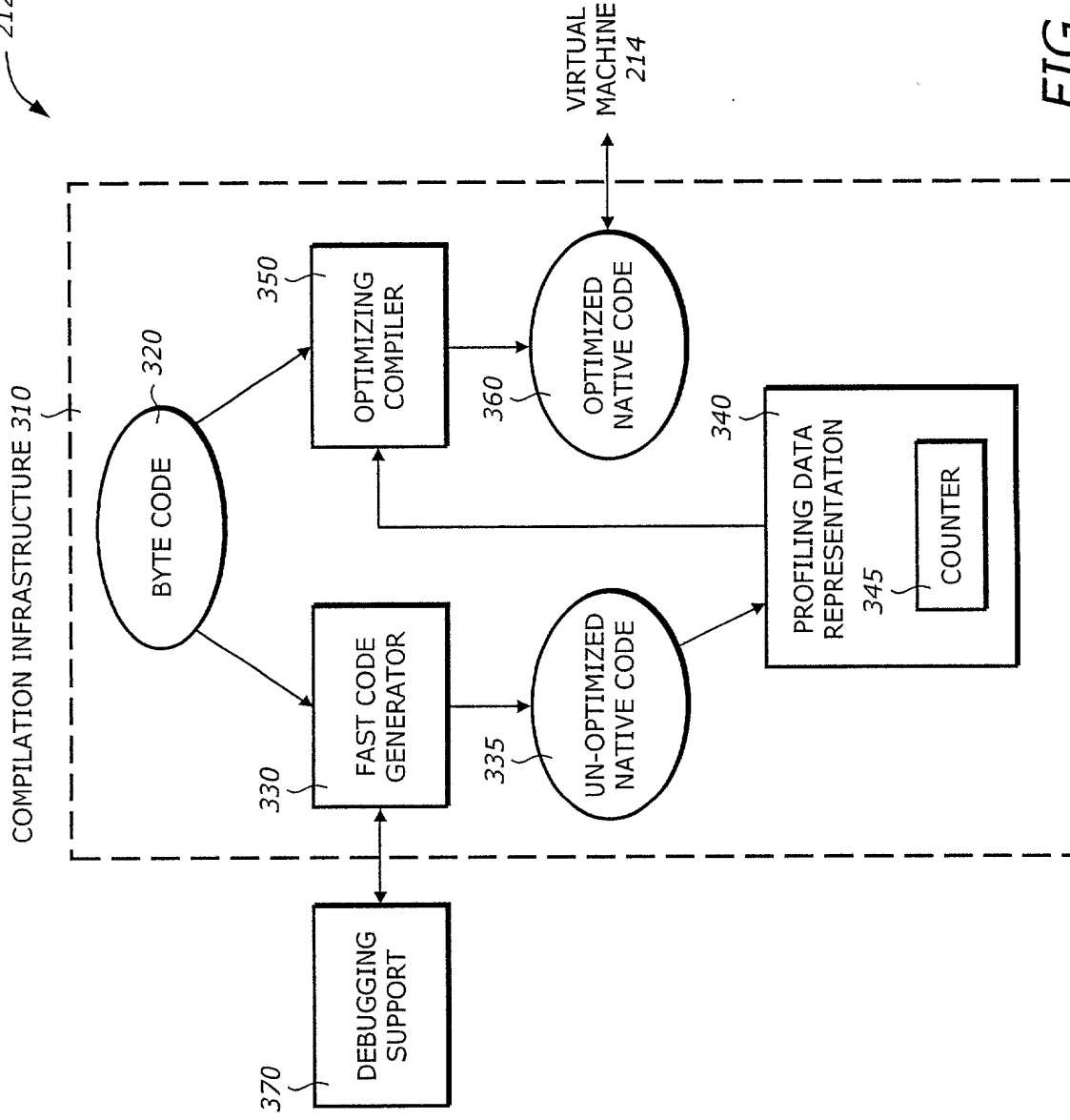


FIG. 3

COMPILATION
INFRASTRUCTURE 310

370

410
STACK FRAME ACCESS
SUPPORT

420
DATA VALUE ACCESS
SUPPORT

430
CONTROL BREAK-POINT
SUPPORT

440
DATA BREAK-POINT
SUPPORT

445
FIELD ACCESS AND
MODIFICATION WATCH

FIG. 4

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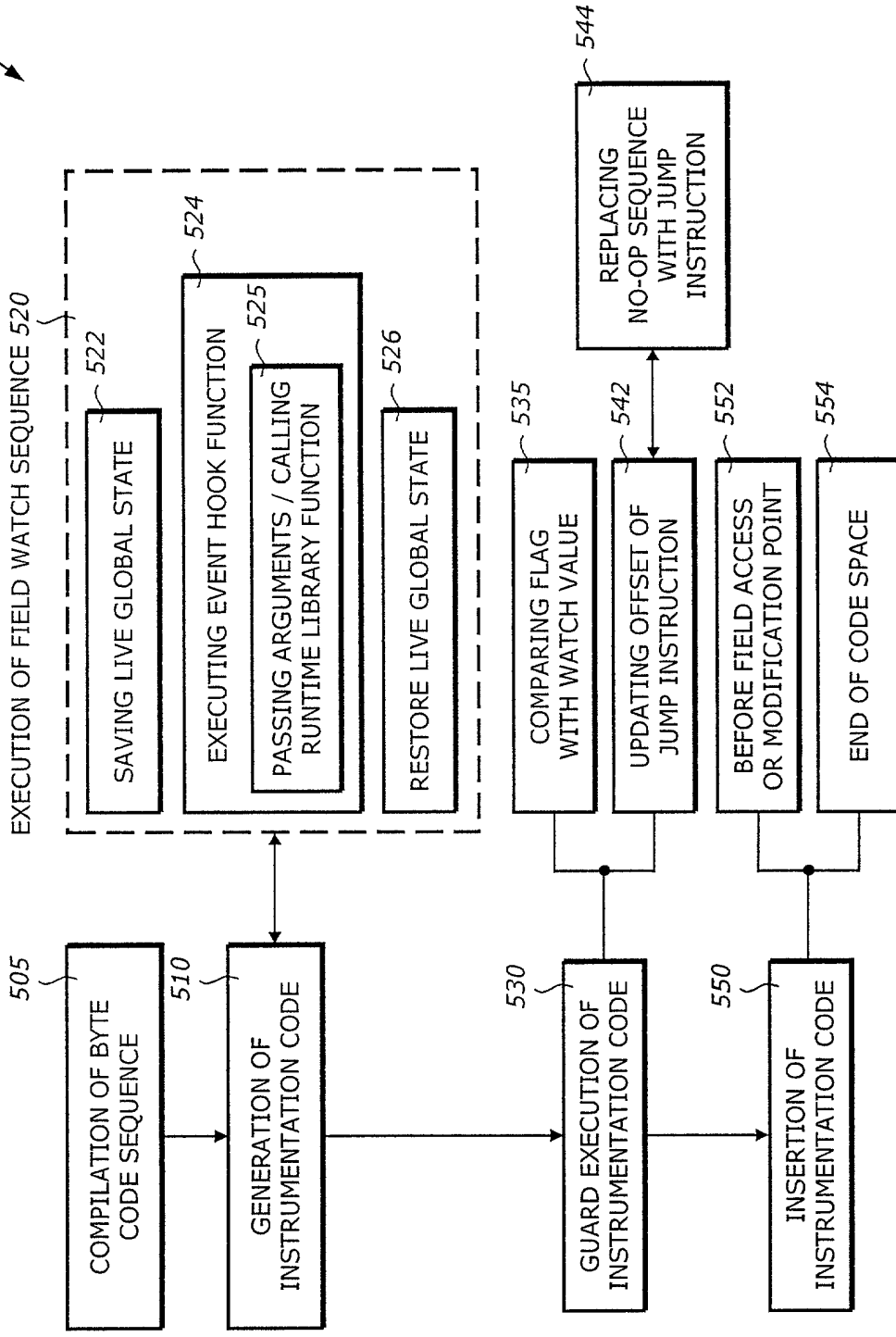


FIG. 5

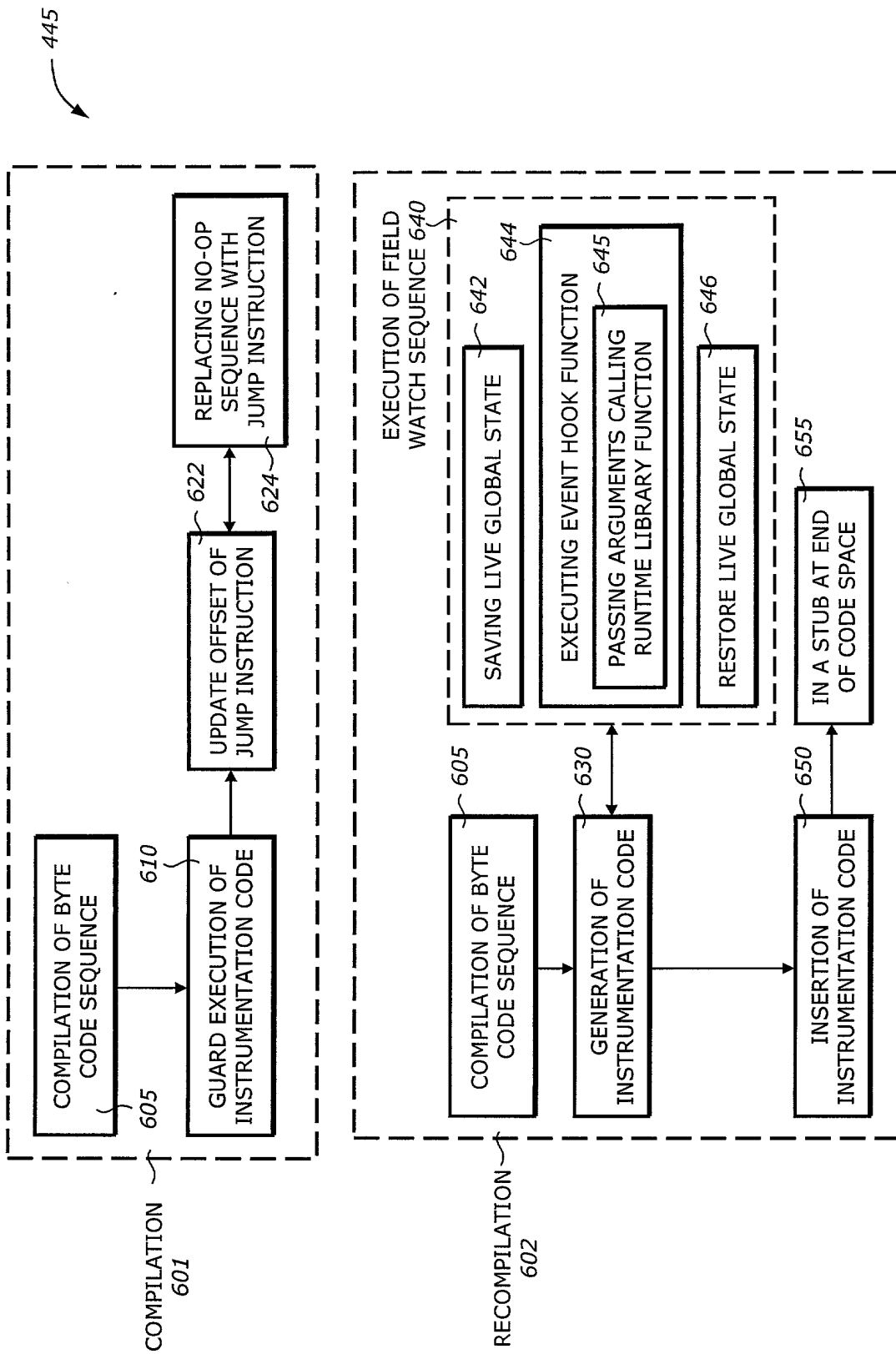


FIG. 6

```

1.  aload 6
2.  getfield #42
3.      mov    ecx, DWORD PTR [esp + 10h]
4.      mov    edx, DWORD PTR [ecx + 04h]
5.      Mov    DWORD PTR [esp + 08h], edx

6.      cmp    BYTE PTR [F10B78h], 01h
7.      jnz    NoWatch
8.      push   0f10b50h
9.      push   ecx
10.     call   10A837A0h

11.  iload 4
12.  if_cmpne 80

13.      NoWatch:
14.      mov    eax, DWORD PTR [esp + 18h]
15.      cmp    eax, DWORD PTR [ecx + 08h]
16.      jnz    ____

```

FIG. 7

```

1. dconst_1
2. aload_0
3. getfield #159
4.      mov    edx, DWORD PTR [ebp + 08h]

5.      jmp    Watch

6. i2d

    WatchRet:
7.      fld    DWORD PTR [eax + 44h]

8. ldc2_w #191
9. ddiv
10.     fld    QWORD PTR [F7DB08h]
11.     fdivr   st(0), st(1)
12.     fstp    st(1)

    ———

13. areturn

    ———

    Watch:
14.     push   eax

15.     mov    ecx, DWORD PTR [eax + 44h]
16.     mov    DWORD PTR [ebp + FFFFFFFB4h], ecx
17.     mov    edx, DWORD PTR [57F710h]
18.     mov    DWORD PTR [ebp + FFFFFFFB8h], edx
19.     fstp    QWORD PTR [ebp + FFFFFFFC0h]

20.     push   013282a0h
21.     push   eax
22.     call   10A837A0h

23.     fld    QWORD PTR [ebp + FFFFFFFC0h]

24.     pop    eax
25.     jmp    WatchRet

```

FIG. 8


```

1. dconst_1
2. aload_0
3. getfield #159
4.      mov    edx, DWORD PTR [ebp + 08h]

5.      jmp    Watch

6. i2d

    WatchRet:
7.      fild   DWORD PTR [eax + 44h]

8. ldc2_w #191
9. ddiv

10.     fld    QWORD PTR [F7DB08h]
11.     fdivr  st(0), st(1)
12.     fstp   st(1)

```

stub

Watch:

```

    push    eax
    mov     ecx, DWORD PTR [eax + 44h]
    mov     DWORD PTR [ebp + FFFFFFFB4h], ecx
    mov     edx, DWORD PTR [57F710h]
    mov     DWORD PTR [ebp + FFFFFFFB8h], edx
    fstp    QWORD PTR [ebp + FFFFFFFC0h]
    push    013282a0h
    push    eax
    call    10A837A0h
    fld     QWORD PTR [ebp + FFFFFFFC0h]
    pop     eax
    jmp     WatchRet

```

FIG. 9